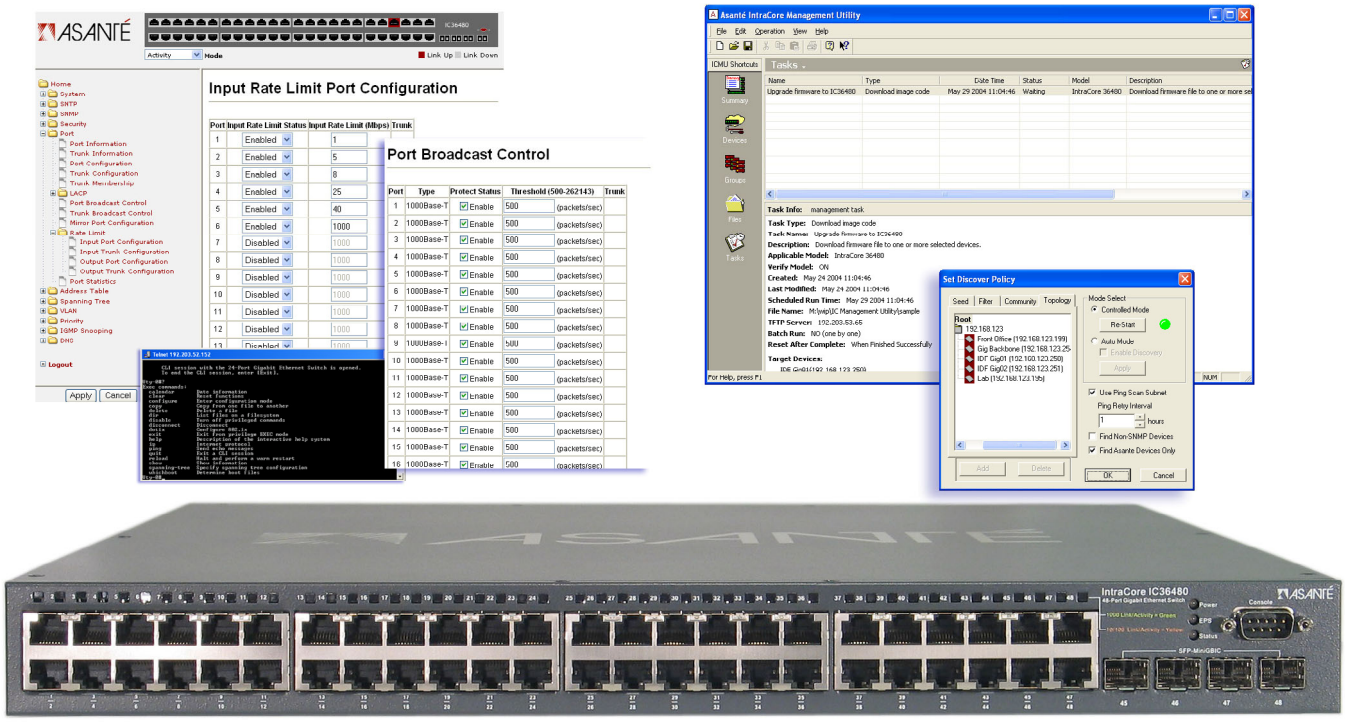
IntraCore® 36480

48-port Managed Gigabit Ethernet Switch



Streamline your network, reduce network congestion and improve application response times by replacing legacy 10/100 Fast Ethernet hubs and switches with Asanté's new high-density IntraCore 36480 switches. These new high-density 10/100/1000BaseT edge switches are the building blocks for enterprises and mid-sized organizations.

All-Gigabit Performance. With Gigabit speeds on all 48 ports, you'll have not only 10x more bandwidth, but also the ability to manage traffic flows. Use rate limiting to proactively guard against congestion caused by a small number of users saturating network bandwidth. With full support for data/voice/video over Ethernet/IP, you'll be running VoIP and IP multicasting with IGMP.

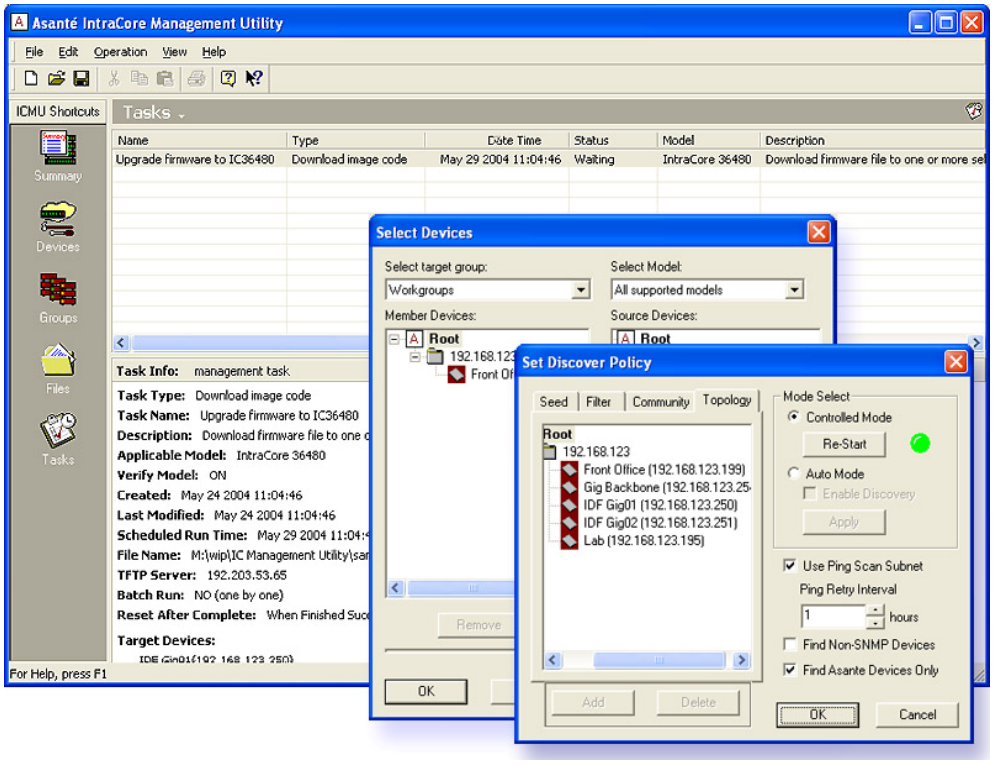
For greater bandwidth and improved resiliency, connect up to 8 ports to form a logical 8 Gbps trunk. A total of 8 static (compatible with Cisco EtherChannel) or dynamic (IEEE 802.3ad link aggregation control protocol) trunks are supported.

Robust Security. Firewalls protect your network from external intruders, but how do you prevent mischief from users inside your network? Use MAC address filters to lock down access to each switch port. Enforce user authentication with IEEE 802.1X using RADIUS or TACACS+ servers. Filter traffic by access control lists.

Protecting switch management requires even greater levels of security. Limit access to authorized administrators by password and IP address or subnet. Encrypt the entire remote login session with secure shell (SSH). This prevents attacks like IP spoofing, IP source and DNS spoofing.

Comprehensive Management. For in-band management, choose web (HTTP), Telnet/CLI or SNMP/RMON. Through the console port, configure the switch out-of-band using a Cisco-like command line interface. Monitor traffic by port mirroring. Control system start-up by choosing from configuration files and operating firmware. Management even extends to internal and environmental conditions (startup, watchdog timers, memory buffer, thermal and more).

For larger installations, with the available **IntraCore Management Utility** (sold separately), swiftly manage hundreds of IntraCore switches from a single Microsoft Windows-based application. Automatically discover compatible Asanté switches and schedule tasks (firmware updates, configuration file upload/download or even reset) for one switch or a group of switches.



Advanced Features and Capabilities

Class of Service (CoS) allows you to specify a greater priority for transmitting certain packets from the switch's buffer when the switch traffic is congested. A weighted round robin (WRR) prevents head-of-line blocking.

Tailor queues to match your priority levels. The IEEE 802.1p standard recommends these priority levels:

Priority	Type of Traffic
0 (lowest)	Best effort
1	Background
2	(spare)
3	Excellent effort
4	Controlled load
5	Video, < 100ms latency and jitter
6	Voice, < 10ms latency and jitter
7 (highest)	Network control

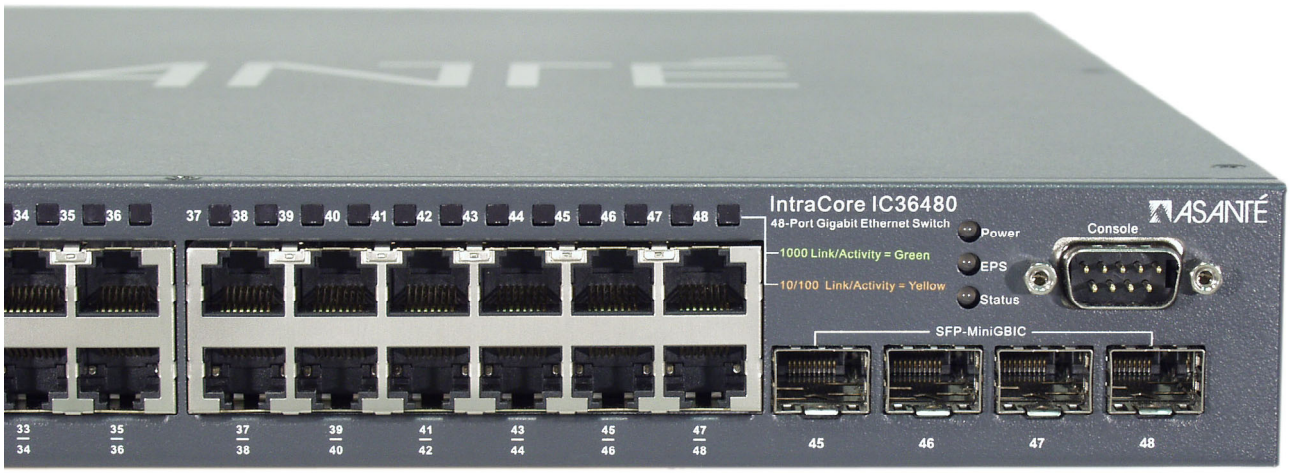
Layer 3/4 traffic may be prioritized using the ToS (IP precedence or IP DSCP) or TCP port. Use an access control list (ACL) mask to configure and map priorities by name and type. By classifying traffic by type (not physical port), your switch management is significantly simplified; whenever a user moves an IP phone, no re-configuration is required.

IGMP is used by IP hosts to register dynamic multicast group membership. It uses best-effort transport to deliver data to all members of its group.

RADIUS, remote authentication dial-in user service, authenticates and authorizes users to a network access server. Multiple authentication methods are supported: PPP, PAP, CHAP, UNIX login and more. Only the password is encrypted in the access-request packet.

TACACS, terminal access controller access system, is a remote access security protocol that centrally authenticates usernames and passwords for multiple communication servers. Cisco's TACACS+ allows a separate access servers to independently provide authentication, authorization and accounting (AAA). The request packet may be encrypted (for better security) or left unencrypted (to ease debugging).

SPECIFICATIONS



Ports

Gigabit Ethernet:	48 x 10/100/1000BaseT Gigabit Ethernet ports with Auto-Uplink™: RJ-45 shielded connectors 4 x 1000BaseX ports: SFP MiniGBIC Combo ports 21-24 will auto-detect/failover between RJ-45 and SFP MiniGBIC; SFP has priority
Configuration:	IEEE Auto Negotiation (sets 10/100/1000 Mbps speed and half/full duplex) or manual configuration via management
Console:	Male DB9 RS-232C DTE with auto-baud (9.6 to 115K)
Emergency Power:	EPS36 port for emergency power supply

Status Indicators

System:	Power and emergency power supply (EPS)
Per Port:	2-color LEDs for link/activity and speed

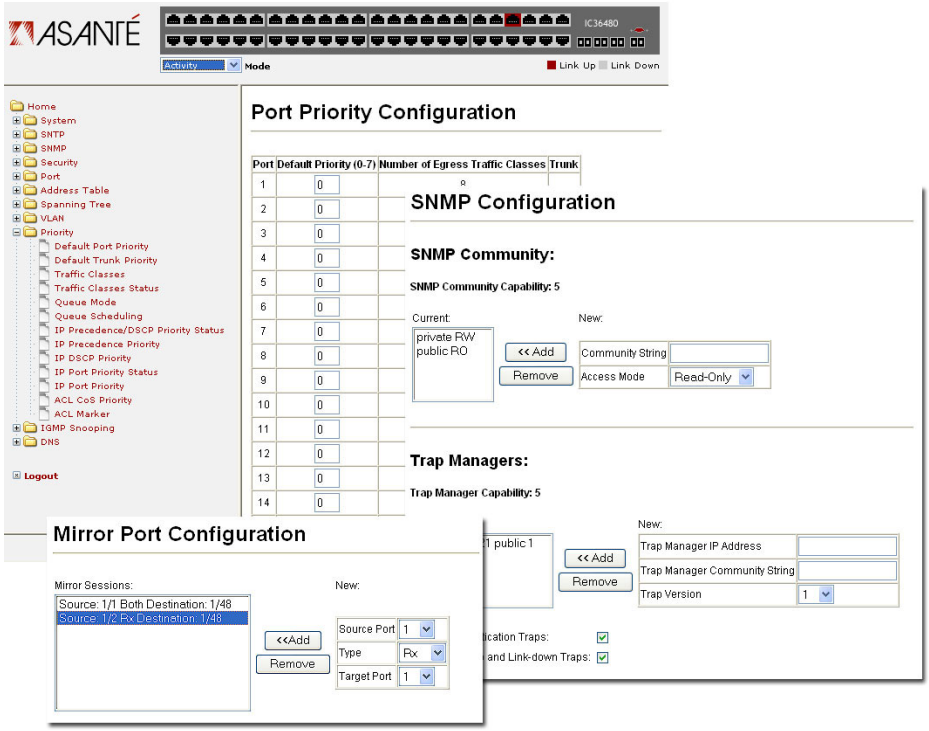
Performance

Efficiency:	Wire-speed, Layer 2 Gigabit Ethernet switching
Switch Architecture:	Quad 24Gbps segments with 20 Gbps crossbar and 4 MB (total) on-board frame buffers Store-and-forward design with anti-HOL (head of line) blocking and broadcast storm protection
Flow Control:	Selectable IEEE 802.3x flow control (full duplex) and back pressure (half duplex)
Link Aggregation:	Up to 8 trunks x 8 ports/trunk; compatible with IEEE 802.3ad and Cisco EtherChannel
Jumbo Frames:	Up to 9 KB
Forwarding MAC Table:	16K addresses with automatic learning and aging
Buffers:	32 MB SDRAM

Management

In-Band:	Choose from web (HTML, HTTPS), SNMP v2, RMON and Telnet/SSH with Cisco-like command line interface (CLI) for up to 4 sessions. Group management with optional IntraCore Management Utility (ICMU)
Out-of-Band:	Direct connect to console port with ANSI VT-100 compatible terminal
Security:	Password, IP address (5 entries), secure shell (SSH v2) and HTTPS
Mirror:	Monitor any port from any port (at the same speed)
Internal:	Thermal plus system events (memory allocation, start-up, traps, watch dog timer, buffer, stack)
Firmware:	Dual banks of operational and configuration code saved to flash memory

Web Management



System Requirements:	Internet Explorer 5, Netscape 6, Apple Safari 1.2, Mozilla Firefox 0.8 and later. Windows Me/2000/XP, Mac OS X 10.3 or Linux. Screen resolution 1024 x 768 or higher recommended
Dashboard:	Visually displays the status of all ports by activity, duplex or flow control
System:	System info, switch info, bridge extension config (including GMRP), IP config (including IP address mode static, BOOTP and DHCP), firmware and configuration file utilities (TFTP download/upload, delete)
SNTP:	Simple Network Time Protocol config and time zone settings
SNMP:	Simple Network Management Protocol settings for community/access mode and trap. Selectable traps for authentication and link up/down
Security:	Passwords, authentication (local, RADIUS, TACACS+ or in sequence), HTTPS, SSH (server, host-key), 802.1X (single/multi-host, auto/force), access control list (set mask by IP/MAC ingress/egress, port binding) and IP filter (Web, SNMP, Telnet)
Port:	Port info/config (name, admin, speed, duplex, flow control, auto negotiation, auto/forced, flow control), trunk info/config, LACP (config, port actor/partner, key, priority, neighbors), port/trunk broadcast (500-262,143 packets/second threshold), mirror port (source/target, Tx/Rx/both), rate limit (input/output, port/trunk, 1-1000 Mbps), statistics (up to 42 counters for each port/trunk)
Address Table:	Static addresses (MAC address, VLAN, add/remove, permanent/delete on reset), dynamic address (port/trunk, MAC address, VLAN, sort, count) and address aging (10–1,000,000 seconds)
Spanning Tree:	Up to 32 VLANs per 802.1s spanning tree. Type (MSTP/RSTP/STP), priority (0–61,440 in 4096 steps), root (hello, age, delay), RSTP (path cost, transmission limit), MSTP (instance, region, hop count), port/trunk config (state, priority, path cost, admin link type, fast forwarding, migration, trunk), MSTP (VLAN, port/trunk config)
Virtual LAN (VLAN):	Up to 255 VLANs with 4094 IDs. 802.1Q (GVRP, static membership by port, PVID, tag, ingress filter, GVRP status, GARP join/leave/leave all timer, hybrid/1Q trunk, trunk), private VLAN (uplink/downlink, trunk member) and protocol VLAN (ID, frame, IP/ARP/RARP)
Priority:	Up to 8 priority levels (0–7). Port/trunk config (default priority, traffic class, queue mode (WRR/strict), WRR weights (1–15), IP precedence/DSCP priority, DSCO class of service (0–7), global IP port priority (TCP/UDP port, Class of Service) and ACL (port, name, CoS priority, mapping, marker)
IGMP Snooping:	Internet Group Management Protocol for managing multicast service. Config (querier, count, interval, delay, version), multicast router port info, static multicast router port config (port/trunk, VLAN), IP multicast registration (VLAN, multicast IP address) and IGMP member port (port/trunk, VLAN, multicast IP, port, trunk)
Domain Naming Service (DNS):	Config (default name, add/remove domain name, add/remove name server IP), static host (name, 1–8 IP addresses) and cache status

Standards Compliance

IEEE:	IEEE 802.1D spanning tree and bridge filters
	IEEE 802.1p prioritization (class of service)
	IEEE 802.1Q virtual LAN (VLAN)
	IEEE 802.1s multiple spanning tree protocol
	IEEE 802.1w rapid reconfiguration spanning tree protocol
	IEEE 802.1v protocol-based VLANs
	IEEE 802.1x port authentication
	IEEE 802.3ad link aggregation control protocol
	IEEE 802.3x full duplex and flow control
	IEEE 802.3z 1000BaseSX over 50 micron multi-mode fiber; maximum distance 1,804 feet (550 meters)
	IEEE 802.3ab 1000BaseT over Category 5 UTP (4 pairs); maximum distance 328 feet (100 meters)
	IEEE 802.3u 100BaseTX over Category 5 UTP (2 pairs); maximum distance 328 feet (100 meters)
	IEEE 802.3 Ethernet, 10BaseT over Category 3 UTP (2 pairs); maximum distance 328 feet (100 meters)
IETF:	RFC 792 ICMP
	RFC 826 ARP
	RFC 1112 IGMP
	RFC 1155 SMI
	RFC 1157 SNMP
	RFC 1213 MIB II (system, interfaces, ip, icmp, tcp, udp and snmp groups)
	RFC 1215 trap
	RFC 1492 terminal access controller access system (TACACS)
	RFC 1493 trap
	RFC 1493 bridge MIB (4 groups)
	RFC 1517 SNMP over UDP/IP
	RFC 1541 DHCP
	RFC 1643 Ether-like MIB
	RFC 1757 RMON
	RFC 2012 UDP MIB
	RFC 2013 TCP MIB
	RFC 2021 RMON II probe configuration group
	RFC 2030 simple network time protocol
	RFC 2096 forwarding table MIB
	RFC 2233 interface group MIB
	RFC 2236 IGMP v2
	RFC 2618 RADIUS MIB
	RFC 2665 Ether-like
	RFC 2668 MAU MIB
	RFC 2674 bridge MIB extension (P-bridge, Q-bridge)
	RFC 2737 entity MIB
	RFC 2742 extensible SNMP agent MIB
	RFC 2819 RMON groups 1, 2, 3 and 9 (statistics, history, alarm and events)
	RFC 2863 interface group MIB
	RFC 2865 RADIUS
	RFC 2933 IGMP MIB
	Asanté Private MIB
Safety:	CSA/US, CB (IEC 60950)
Emissions:	FCC Class A, CE Mark Class A, VCCI, CAN

Physical

Dimensions (W x D x H):	17.3 x 16.3 x 1.7 inches (440 x 415 x 44 mm); 1U rack height
Weight:	12.9 lbs (5.8 Kg)
Case:	Metal finished in Asanté Gray; desktop or rack mounting (kit included)
Operating Temperature:	32º to 104º F (0º to 40º C)
Relative Humidity:	10% to 90% non-condensing
Power:	Internal switching, 100-240 VAC, 50/60 Hz, maximum 150 watts

Support

Technical Support:	24-hour support via web and ftp. 1-year email and telephone support
Product Warranty:	3-year product warranty covers defects in manufacturing and workmanship; 1-year for firmware updates
AsantéCare:	Optional support agreement for extended product warranty, firmware updates and tech support

Packing List

Product:	IntraCore 36480 switch
Localized Power:	Grounded, 3-wire power cord
Printed Documentation:	Setup Guide
CD-ROM:	Utilities, User's Manual and other documentation
Accessories:	Rackmount kit and console port cable

Recommended Accessories

Other IntraCore Switches:	IC36240 (24-port L2 Gig) IC35160-T (16-port L2 Gig) IC35516-T (16-port L2/L3 Gig)
SFP Fiber Modules:	SFP M1000SX, SFP M1000LX, SFP M1000LZ
Emergency Power:	IC36-EPS12
Management Software:	ICMU (IntraCore Management Utility)

ORDERING INFORMATION

Model Name*	Description
IC36480	48-port 10/100/1000T managed Gigabit Ethernet switch with 4 combo 10/100/1000T and SFP ports

* For international part numbers, please refer to the Asanté price list.

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